Cargill Salt

~~JV~~
CJE
Warren office
orange
A6240

October 14, 2005

James Voss
Cadillac Place
3058 West Grand Blvd
Suite2-300
Detroit, MI 48202

Re: Cylinder Gas Audit for Boiler #10 – Permit No. 184-01A
Third Quarter, 2005

Dear Mr. Voss;

Please find enclosed a copy of the Third Quarter Cylinder Gas Audit conducted on September 28, 2005 on Boiler #10.

If you have any questions please call me at 810-326-2763.

Sincerely,

Anthony J. Hodny
EHS Coordinator

cc: Tom Gasloli
Technical Programs Unit-AQD
P.O. Box 30260
Lansing, Michigan 48909-7760

Wade Richards
Brandon Pretzsch

Tony_Hodny@cargill.com 916 S. Riverside St. Clair, MI 48079-5335 810-326-2763 810-329-6560 fax

CYLINDER GAS AUDIT

FOR

Cargill Salt

St. Clair, MI

Unit: Boiler #10

MONITORING SOLUTIONS, INC.
Dilution CEMS

Third Quarter Results - 2005

PREPARED BY:

Monitoring | Solutions

Leaders in Environmental Monitoring Systems & Services

TABLE OF CONTENTS

LIST OF TABLES

Section 1
Introduction

Monitoring Solutions, Inc., of Indianapolis, Indiana conducted a Third quarter Cylinder Gas Audit at Cargill Salt in St. Clair, MI on September 28th, 2005.

The audit of the Continuous Emission Monitoring System was conducted for NOX & CO2. Our assessment of the Third quarter CGA results indicates that all of the analyzers evaluated during this test program meet the accuracy requirements as outlined in 40 CFR 60, Appendix F. Table 1.1 summarizes the results for the cylinder gas audit.

Reviewed by: Jolinda Miller

Date: October 7, 2005

Summary of Cylinder Gas Audit Results

Parameter	Low Gas Error	Mid Gas Error
NOX	4.53	1.04
CO2	3.64	0.94
	Pass	**Pass**

Results Checked By: _____

Date: _____

Table 1-1

40 CFR 60, Appendix F Performance Test requirements: <15%

Section 2
Cylinder Gas Audit Procedures

Each Continuous Emission Monitor (CEM) must be audited three out of four calendar quarters of each year. As a part of the Quality Control (QC) and Quality Assurance (QA) procedures, the quality of data produced is evaluated by response accuracy compared to known standards.

The CGA for the quarter was conducted in accordance with the QA/QC procedure outlined in 40 CFR 60, Appendix F.

The Audit consisted of challenging the CEM with an audit gas of known concentration with 2 upscale levels of gas, at 20-30% of the system span and at 50-60% of the system span. The audit cylinders contain pollutant of diluent gas certified in accordance with U.S. EPA protocol 1.

The audit gases were introduced into the entire sampling and analysis system through the normal part of the daily QC gases.

The procedure was conducted as follows:

1. Audit cylinder 1 was connected to the system.
2. Manual span was initiated until a stable response was achieved.
3. Values were recorded as the system was allowed to operate in a normal sampling and analysis manner without adjustment.
4. The first audit cylinder was removed and replaced by audit cylinder 2.
5. Manual span was initiated for approximately 15 minutes until a stable response was achieved.
6. This series of steps was repeated through three audit runs.

For each audit cylinder (or audit point), the percent accuracy was determined. The average of the accuracy was determined by the following equation:

$$A = \frac{(Cm - Ca) \times 100}{Ca}$$

Where:

A	=	Accuracy of CEMS (%)
Cm	=	Average CEMS response during audit in applicable standard or concentration (ppm or %)
Ca	=	Average audit (cylinder gas certified value) in units of applicable standard or concentration (ppm or %)

Accuracy (A) value of $\pm$ 15% or less is considered acceptable for criteria pollutants or diluent gas.

Section 3
Cylinder Gas Audit Data Sheets

CYLINDER GAS AUDIT (CGA) ERROR DETERMINATION

SITE: Cargill / St. Clair
SOURCE ID: Boiler #10

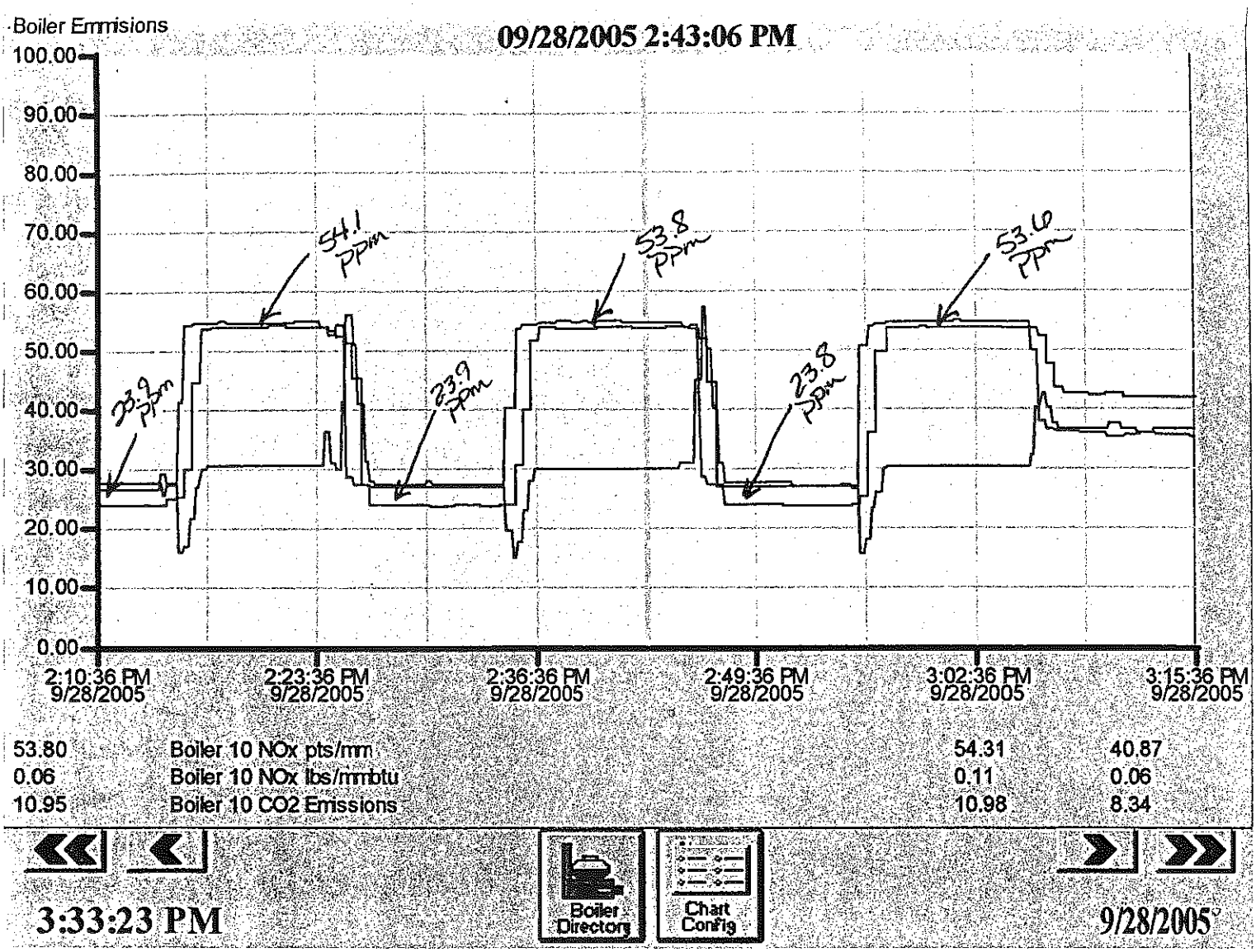
CONDUCTED BY : Tom Barr
DATE: 9/28/2005

MONITOR TESTED: NOX
RANGE : 0 to 100 PPM

	Run	Time	Reference value	Monitor value	Difference	Error	%
Low-level	1	2:10	25.00	23.90	1.10	4.40	%
	2	2:30	25.00	23.90	1.10	4.40	%
	3	2:50	25.00	23.80	1.20	4.80	%
Mid-level	1	2:20	54.40	54.10	0.30	0.55	%
	2	2:40	54.40	53.80	0.60	1.10	%
	3	3:00	54.40	53.60	0.80	1.47	%

Low-level
Arithmetic Mean 23.87
CGA Error 4.53
Tank S/N CC121481

Mid Level
Arithmetic Mean 53.83
CGA Error 1.04
Tank S/N SA17182


Boiler Emmisions
09/28/2005 2:43:06 PM
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
54.1 PPM
53.8 PPM
53.6 PPM
23.9 PPM
23.9 PPM
23.8 PPM
2:10:36 PM 9/28/2005
2:23:36 PM 9/28/2005
2:36:36 PM 9/28/2005
2:49:36 PM 9/28/2005
3:02:36 PM 9/28/2005
3:15:36 PM 9/28/2005
53.80 Boiler 10 NOx pts/mm 54.31 40.87
0.06 Boiler 10 NOx lbs/mmbtu 0.11 0.06
10.95 Boiler 10 CO2 Emissions 10.98 8.34
Boiler Directory
Chart Config
3:33:23 PM
9/28/2005

Nox

CYLINDER GAS AUDIT (CGA) ERROR DETERMINATION

SITE: Cargill / St. Clair
SOURCE ID: Boiler #10

CONDUCTED BY : Tom Barr
DATE: 9/28/2005

MONITOR TESTED: CO2
RANGE : 0 to 20%

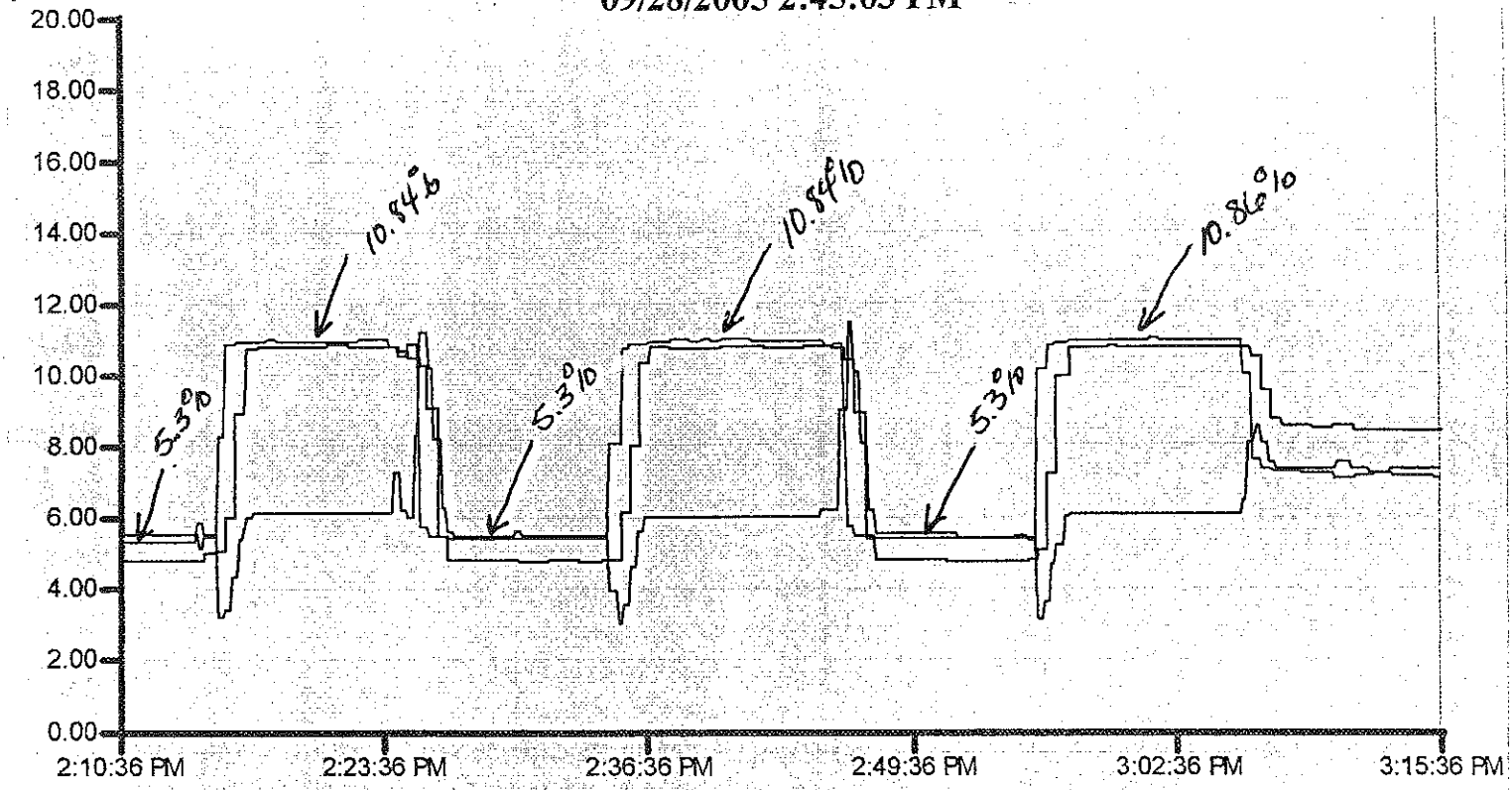
	Run	Time	Reference value	Monitor value	Difference	Error	%
Low-level	1	2:10	5.50	5.30	0.20	3.64	%
	2	2:30	5.50	5.30	0.20	3.64	%
	3	2:50	5.50	5.30	0.20	3.64	%
Mid-level	1	2:20	10.95	10.84	0.11	1.00	%
	2	2:40	10.95	10.84	0.11	1.00	%
	3	3:00	10.95	10.86	0.09	0.82	%

Low-level
Arithmetic Mean 5.30
CGA Error 3.64
Tank S/N CC121481

Mid Level
Arithmetic Mean 10.85
CGA Error 0.94
Tank S/N SA17182

Boiler Emmisions

09/28/2005 2:45:03 PM



54.02	Boiler 10 NOx pts/mm	54.31	40.87
0.06	Boiler 10 NOx lbs/mmbtu	0.11	0.06
10.95	Boiler 10 CO2 Emissions	10.98	8.34

Boiler Directory | Chart Config

3:35:06 PM **9/28/2005**

Co2

Section 4
Cylinder Gas Certification Sheets

PRAXAIR

Praxair Distribution, Inc.
145 Shimersville Road
Bethlehem, PA 18015

Tel: (610) 691-2474
Fax: (610) 758-9103

First Quarterly Test 9/28/05 Tom Barr By

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER PRAXAIR DETROIT

P.O NUMBER 983840-01

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
99.4 PPM NITRIC OXIDE GMIS VS	1684b	CAL013591	97.8 PPM
6.96% CARBON DIOXIDE GMIS VS	2745	CAL-010433	15.69%

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. COMPONENT 99.4 PPM NITRIC OXIDE GMIS ANALYZER MAKE-MODEL-S/N TECO MODEL 42C 42CHL-55533-304

ANALYTICAL PRINCIPLE CHEMILUMINESCENCE
LAST CALIBRATION DATE 08/31/05
FIRST ANALYSIS DATE 09/08/05
SECOND ANALYSIS DATE 09/15/05

Z 0.0	R 99.4	C 24.8	CONC. 24.8		Z 0.0	R 99.4	C 25.0	CONC. 25.0	
R 99.0	Z 0.0	C 24.8	CONC. 24.8		R 99.6	Z 0.0	C 25.0	CONC. 25.0	
Z 0.0	C 24.9	R 99.4	CONC. 24.9		Z 0.0	C 25.0	R 99.6	CONC. 25.0	
U/M PPM		MEAN TEST ASSAY	24.9		U/M PPM		MEAN TEST ASSAY	25.0	

2. COMPONENT 6.96% CARBON DIOXIDE GMIS VS ANALYZER MAKE-MODEL-S/N SIEMENS ULTRAMAT 5E SN: D2-412

ANALYTICAL PRINCIPLE NON-DISPERSIVE INFRARED
LAST CALIBRATION DATE 08/31/05
FIRST ANALYSIS DATE 09/08/05
SECOND ANALYSIS DATE

Z 0.00	R 6.97	C 5.51	CONC. 5.50		Z	R	C	CONC.	
R 6.97	Z 0.00	C 5.51	CONC. 5.50		R	Z	C	CONC.	
Z 0.00	C 5.50	R 6.97	CONC. 5.49		Z	C	R	CONC.	
U/M %		MEAN TEST ASSAY	5.50		U/M %		MEAN TEST ASSAY		

VALUES NOT VALID BELOW 150 PSIG; BALANCE:NITROGEN
UNCERTAINTIES: NO±0.3PPM; CO2±0.03%

THIS CYLINDER NO. CC121481
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA-600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ± 1 % NIST TRACEABLE
CYLINDER PRESSURE 2000 PSIG
CERTIFICATION DATE 09/15/05
EXPIRATION DATE 09/15/07 TERM

CERTIFIED CONCENTRATION

NITRIC OXIDE	25.0PPM
CARBON DIOXIDE	5.50%
NITROGEN	BALANCE
NOx (FOR REFERENCE ONLY)	25.0PPM

ANALYZED BY

KELLY SCHOCH

CERTIFIED BY 9/21/05

PRAXAIR

Praxair Distribution, Inc.
145 Shimersville Road
Bethlehem, PA 18015

Tel: (610) 691-2474
Fax: (610) 758-9103

Installed 2/8/05 pkr

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER PRAXAIR DETROIT **P.O NUMBER** 769134-1

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
NITRIC OXIDE 98.1PPM GMIS VS	1684B	FF17256	97.5PPM
11.11% CARBON DIOXIDE GMIS VS	2745	CAL-010433	15.69%

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. COMPONENT NITRIC OXIDE 98.1PPM GMIS VS ANALYZER MAKE-MODEL-S/N TECO MODEL 42C 42CH-57352-312

ANALYTICAL PRINCIPLE Chemiluminescence — LAST CALIBRATION DATE 12/31/04

FIRST ANALYSIS DATE 01/06/05 — SECOND ANALYSIS DATE 01/13/05

Z	0.0	R	98.1	C	54.6	CONC. 54.7	Z	0.0	R	97.1	C 53.8	CONC. 54.4
R	98.0	Z	0.0	C	54.9	CONC. 55.0	R	97.2	Z	0.0	C 53.7	CONC. 54.3
Z	0.0	C	54.2	R	97.8	CONC. 54.3	Z	0.0	C	53.5	R 97.0	CONC. 54.1
U/M	PPM			MEAN TEST ASSAY		54.6	U/M	PPM			MEAN TEST ASSAY	54.2

2. COMPONENT 11.11% CARBON DIOXIDE GMIS VS ANALYZER MAKE-MODEL-S/N HORIBA VIA 510, S/N 576979023

ANALYTICAL PRINCIPLE NON-DISPERSIVE INFRARED — LAST CALIBRATION DATE 12/31/04

FIRST ANALYSIS DATE 01/06/05 — SECOND ANALYSIS DATE

Z	0.00	R	11.11	C	10.95	CONC. 10.94	Z		R		C	CONC.
R	11.11	Z	0.00	C	10.96	CONC. 10.95	R		Z		C	CONC.
Z	0.00	C	10.97	R	11.13	CONC. 10.96	Z		C		R	CONC.
U/M	%			MEAN TEST ASSAY		10.95	U/M	%			MEAN TEST ASSAY	

VALUES NOT VALID BELOW 150 PSIG; BALANCE:NITROGEN
UNCERTAINTIES:NO±0.6PPM, CO2±0.07%

THIS CYLINDER NO. SA17182
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA-600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ± 1 % NIST TRACEABLE
CYLINDER PRESSURE 2000 PSIG
CERTIFICATION DATE 01/13/05
EXPIRATION DATE 01/13/07 TERM

CERTIFIED CONCENTRATION

NITRIC OXIDE	54.4PPM
CARBON DIOXIDE	10.95%
NITROGEN	BALANCE
NOx (FOR REFERENCE ONLY)	54.4PPM

ANALYZED BY JOSH FINCKE

CERTIFIED BY JA 1/13/05